

Remarks

The Office Action mailed May 10, 2004 has been carefully reviewed and the foregoing amendment has been made in consequence thereof.

Claims 1-19 are now pending in this application, of which claims 1, 3 and 10 have been amended. It is respectfully submitted that the pending claims define allowable subject matter.

The specification has been amended to correct clerical errors with respect to reference numbers and to provide consistency with the reference numbers of the drawings.

The rejection of claim 3 under 35 U.S.C. § 112 is respectfully traversed. Claim 3 has been amended for clarity and is believed to overcome the issue noted in the Office Action. Accordingly, Applicants respectfully request that the Section 112 rejection of claim 3 be withdrawn.

The rejection of claims 1, 2, 4, 6, 7, 8, 10, 11, and 14-17 under 35 U.S.C. § 102(b) as being anticipated by Suzuki (U.S. Patent No. 6,325,680) is respectfully traversed.

Suzuki describes a connector (1) having a contact (2) and a housing (100). It is respectfully submitted that the contact (2) of Suzuki does not have the corresponding structure and function recited in the present claims.

As described by Suzuki, the contact (2) includes a stopper (46) extending upward from a box-shaped body (4) and a lance (50) extending downward from the body (4). The housing (100) includes a groove (134) which accepts the stopper (46) and an anchoring hole (138) which receives the lance (50). The stopper (46) prevents over-insertion of the contact (2) into the housing (100), while the lance (50) provides resistance to forces that tend to pull the contact (2) from the housing (100). See Suzuki col. 2, lines 20-58. As clearly seen in Figures 3 and 5, because the lance (50) of the contact (2) is located within the anchoring hole (100) of the housing (100) when the contact is installed, the lance (50) is suspended in air and incapable of being

compressed within the housing (100) to provide a biasing force to retain the contact in position with respect to the housing. Indeed, Suzuki describes that in certain instances, the lances (50) are pulled to the outside of the housing (100) through the anchoring holes (138), and in such instances the lances are stressed in tension rather than placed in compression during use. See Suzuki col. 4, lines 50-55.

Amended claim 1 recites an electrical contact comprising “a body having a first wall and a second wall opposed to said first wall” “a rigid lance integrally formed with said first wall and projecting away from said second wall,” and “a deflectable biasing beam integrally formed with said second wall and extending away from said first wall in a direction opposite to said lance, “said biasing beam being compressed when said contact is installed into a housing, thereby generating a retention force in a direction transverse to a longitudinal axis of said body and maintaining said lance in a predetermined position within the housing.” For the reasons set forth above, it is respectfully submitted that Suzuki neither describes nor suggests the contact recited in claim 1.

Claims 2, 4, 6 and 7 depend from independent claim 1, and when the recitations of claims 2, 4, 6 and 7 are considered in combination with the recitations of claim 1, claims 2, 4, 6, and 7 are likewise submitted to be patentable over Suzuki.

Independent claim 10 has been amended for clarity and now recites an electrical connector system comprising at least one housing comprising a longitudinal cavity therein and an electrical contact situated within said cavity, “wherein one of said housing and said contact comprises: opposed top and bottom walls; a rigid lance integrally formed with said top wall, said lance in abutting contact with a portion of the other of said housing and said contact; and a deflectable biasing beam extending from said bottom wall and engaging the other of said housing and said contact, a deflection of said biasing beam in a direction transverse to a longitudinal axis of said cavity providing a biasing retention force directed toward said top wall to maintain said contact in position relative to said housing.”

Suzuki neither describes nor suggest the connector system of claim 10. The lance (50) of Suzuki's contact is located in an anchoring hole (138) in housing (100) when installed, and is not deflected in a direction toward the top wall of the contact when installed. Rather the lance (50) is suspended in air within the anchoring hole (138) within the housing (100).

Claim 10 is therefore respectfully submitted to be patentable over Suzuki.

Claims 11 and 14-17 depend from independent claim 10, and when the recitations of claims 11 and 14-17 are considered in combination with the recitations of claim 10, claims 11 and 14-17 are likewise submitted to be patentable over Suzuki.

For the reasons set forth above, Applicants respectfully request that the Section 102 rejection of claims 1, 2, 4, 6, 7, 8, 10, 11, and 14-17 be withdrawn.

The rejection of claims 10 and 13 under 35 U.S.C. § 102(b) as being anticipated by Shirouzu et al. (U.S. Patent No. 6,390,860) is respectfully traversed.

Shirouzu et al. describe a connector (1) having a connecting terminal (30) and a housing (10). The housing (10) includes a cylindrical terminal accommodating chamber (11) which receives the connecting terminal (30). A flexible locking piece (16) is provided in an engaging chamber (14) of the housing (10), and the terminal includes a locking section (33) and a locking hole (34) which receives a locking protrusion (17) of the locking piece (16).

The Office Action cites a portion of an inner wall (13) (see Figure 3 Shirouzu et al.) of the terminal accommodating chamber (11) as a retaining lance formed with a top wall. Applicants respectfully disagree. Shirouzu et al. describe the terminal accommodating chamber (11) as being substantially cylindrical, and thus the chamber (11) is not fairly described as having top and bottom walls. The chamber (11) appears to have a conical shape near the inner wall (13) in Figure 3, and the conical shape guides and receives a coupling section (36) of the terminal (30) when the contact is inserted (see Figure 6 of Shirouzu et al.). Nothing in the text or figures

of Shirouzu et al. describes or suggests that the conical portion near the inner wall (13) serves any purpose to retain the terminal (30).

Furthermore, nothing in the text of Shirouzu et al. describes or suggests that the locking piece (16) biases the terminal (30) against the housing to maintain the terminal in place. Rather, Shirouzu et al. only state that the locking hole (34) in the terminal (30) is engaged by the locking piece (16). The lock protrusion (17) of the locking piece (16) could be received in the locking hole (34) without generating a bias force on the terminal (30).

Still further, Shirouzu et al. describe a vibration preventing piece (37) which is press-fitted into the terminal accommodating chamber (11) to positively prevent vertical vibration of the connecting terminal (30) in the housing (10). The presence of the vibration preventing piece (37) is respectfully submitted to be inconsistent with a biasing force generated in the locking piece (16). Presumably, if the locking piece (16) did generate a locking force, the vibration preventing piece (37) would be unnecessary, or alternatively, a generating force in the locking piece (16) would apparently jam the vibration preventing piece within the housing and frustrate installation of the connecting terminal (30).

Claim 10 recites an electrical connector system comprising at least one housing comprising a longitudinal cavity therein and an electrical contact situated within said cavity, “wherein one of said housing and said contact comprises: opposed top and bottom walls; a rigid lance integrally formed with said top wall, said lance in abutting contact with a portion of the other of said housing and said contact; and a deflectable biasing beam extending from said bottom wall and engaging a portion of the other of said housing and said contact, a deflection of said biasing beam in a direction transverse to a longitudinal axis of said cavity providing a biasing retention force directed toward said top wall to maintain said contact in position relative to said housing.”

Applicants respectfully submit that Shirouzu et al. neither describe nor suggest the connector system of claim 10. As noted above, the housing (10) of Shirouzu et al. is

substantially cylindrical and does not include opposed top and bottom walls. The terminal (30) of Shirouzu et al. includes a vibration preventing piece (37) to position the terminal (30). Shirouzu et al. neither describe neither suggest a lance in the top wall, and do not describe or suggest that the locking piece (16) in the housing serves in any way to bias the terminal (30) in position. Claim 10 is therefore respectfully submitted to be patentable over Shirouzu et al.

Claim 13 depends from claim 10, and when the recitations of claim 13 are considered in combination with the recitations of claim 10, claim 13 is likewise submitted to be patentable over Shirouzu et al.

For the reasons set forth above, Applicants respectfully request that the Section 102 rejection of claims 10 and 13 be withdrawn.

The objection to claims 3, 5, 9, and 12 as dependent upon rejected base claims is respectfully traversed. For the reasons set forth above, the base claims (claim 1 and 10) of claims 3, 5, 9, and 12 are respectfully submitted to be patentable over the cited art. When the recitations of claims 3, 5, 9, and 12 are considered in combination with the recitations of their base claims, it is likewise submitted that claims 3, 5, 9, and 12 are patentable over the cited art.

Applicants note the allowance of claims 18 and 19 with appreciation.

In view of the foregoing amendments and remarks, all the claims now active in this application are believed to be in condition for allowance. Reconsideration and favorable action is respectfully solicited.

Respectfully Submitted,



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